

DOCUMENT RESUME

ED 055 389

EC 040 153

AUTHOR Hammer, Edwin K.
TITLE Review of the Literature in Early Childhood Education, with Emphasis Upon Early Education of Handicapped Children: A Staff Training Manual. Vol. 1, No. 8.
INSTITUTION Texas Univ., Austin. Dept. of Special Education.
SPONS AGENCY Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.
PUB DATE 71
GRANT OEG-0-9-531306- (031)
NOTE 48p.
EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS *Childhood Needs; *Early Childhood Education; Educational Needs; Educational Objectives; *Exceptional Child Education; *Handicapped Children; Intervention; *Literature Reviews

ABSTRACT

The review of literature related to basic ideas in early childhood education relates the development of early education programs to the education of handicapped children. Research studies based on the premise that early mediation of disabilities is beneficial to minimize the effects of the handicapping condition are reviewed, as are studies in program development. Covered are several types of early childhood intervention programs which have been suggested. Types, philosophy, components, and logical development of programs are delineated. The fundamental needs of all children as suggested by L. K. Frank (1938) are examined, to serve as a framework for developing required services for handicapped children. Also reviewed is selected literature relating to teaching strategies, techniques for observing emerging needs in children, and the definition of the role of the early education teacher. (KW)

EC

~~000~~ 040 153E

ED055389

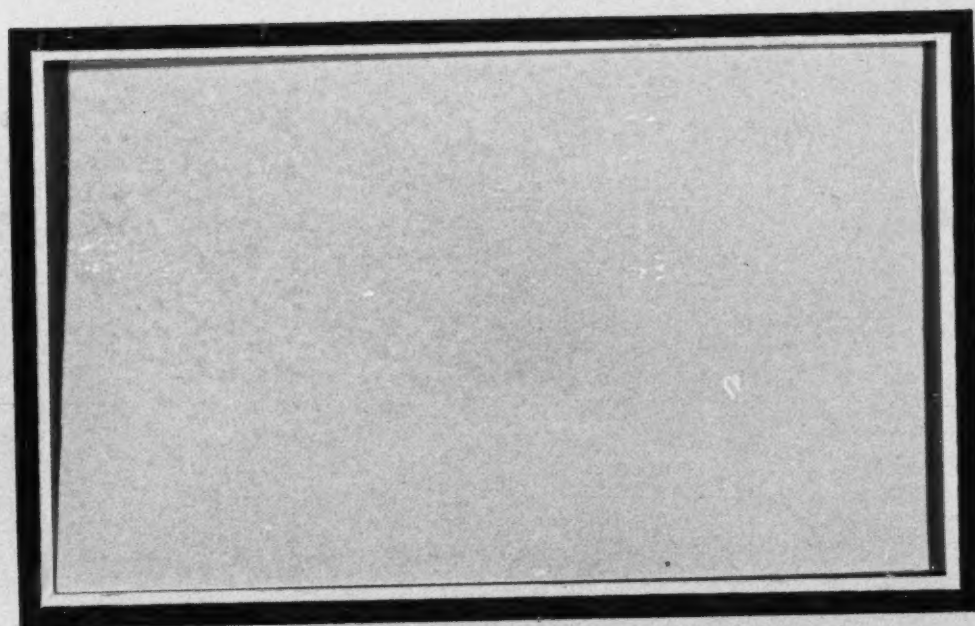
FUNDED BY: THE BUREAU OF EDUCATION FOR THE HANDICAPPED, UNITED STATES OFFICE OF EDUCATION

EARLY CHILDHOOD EDUCATION FOR HANDICAPPED CHILDREN

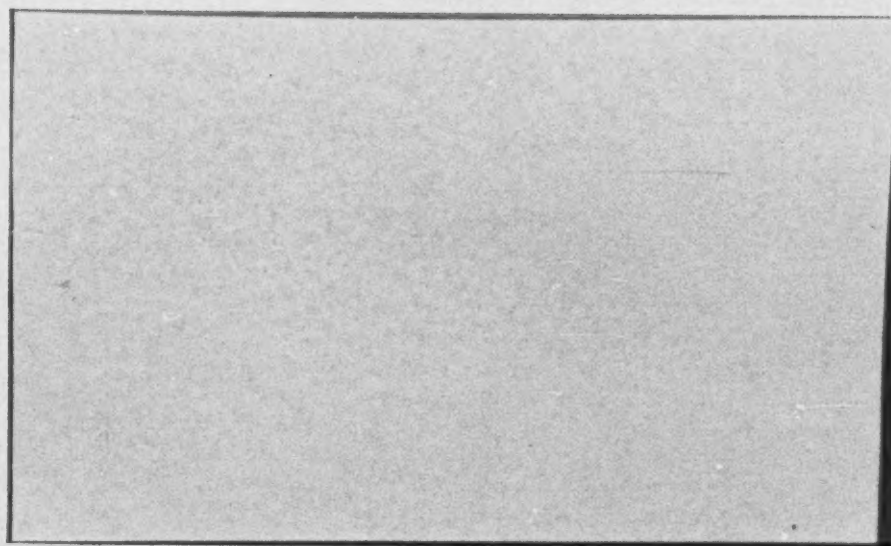


THE DEPARTMENT OF SPECIAL EDUCATION
THE UNIVERSITY OF TEXAS AT AUSTIN

STAFF TRAINING



A MONOGRAPH



A PUBLICATION OF:
Staff Training of Exemplary Early Childhood
Education Centers for Handicapped Children

Funded by a grant from the Bureau of Education
for the Handicapped, U.S.O.E.
PROJECT NUMBER OEG - 0 - 9 · 531306 - (031)

ED055389

THE UNIVERSITY OF TEXAS AT AUSTIN

Program for Staff Training of Exemplary Early Childhood Centers
for Handicapped Children

Jasper Harvey
Project Director

Anne H. Adams
Associate Director

P R E S E N T S

THE DISTINGUISHED STAFF TRAINING MONOGRAPH SERIES

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

REVIEW OF THE LITERATURE IN EARLY
CHILDHOOD EDUCATION, WITH EMPHASIS UPON
EARLY EDUCATION OF HANDICAPPED CHILDREN:
A STAFF TRAINING MANUAL

By

Edwin K. Hammer, Ph.D.

Vol. I No. 8

Coordinator, Area Centers for Services to Deaf-Blind Children, Callier
Hearing and Speech Center, Dallas, Texas
and
Special Consultant for the Staff Training Program

The project presented or reported herein was performed pursuant to a Grant from the U. S. Office of Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U. S. Office of Education, and no official endorsement by the U. S. Office of Education should be inferred.

Research Studies in Early Education
Of Handicapped Children

The rationale for early education of handicapped children is based upon the premise that mediation of disabilities early in the child's life will increase the child's opportunities to develop intellectual abilities and to lead a satisfying life. Underlying this premise is the assumption that if disabling conditions were successfully mediated, before their effects delayed total development, the child would be able to utilize abilities in a more meaningful way to learn to live a satisfying life. This does not imply that the disability will be removed. This does not imply that the disability will not effect development. It does imply that the effects of a handicapping condition may be minimized in the formative years of life so that it does not occupy a dominant position in how the child develops.

Such a premise is supported in the literature in early childhood education, child psychology, learning theory, pediatric medicine, and other professional disciplines which study how children develop systems of behavior. Bloom (1964) studied the stability of human characteristics as they had been reported through longitudinal research projects. The approach taken by Bloom was to identify those periods in life when certain characteristics were stable and times when these characteristics were subject to rapid changes. Bloom (1964, 204) concluded, "it will be noted that, with the exception of school achievement, the most rapid period for the development of.....characteristics is in the first five years of life." Within the first four years of life, half

development of selected characteristics has been identified when the development at the ages of 18 to 20 years is taken as the criterion level of development. He summarized those characteristics which may be considered half-developed at certain chronological ages:

Height	Age 2½
General intelligence	Age 4
Aggressiveness in males	Age 3*
Dependence in females	Age 4*
Intellectuality in males and females	Age 4
General school achievement	Grade 3

*Since we do not have an absolute scale for these characteristics, we have indicated the age at which one-half of the criterion variance can be predicted (Bloom, 1964, 205).

In elaborating on the development of intelligence, Bloom reported that not only was intelligence, as measured at age 17, half developed between the time of conception and age four, but also another 30 per cent of measured intelligence developed between the ages of four and eight years. For the handicapped child, this statement is extremely crucial. If intellectual development is 80 per cent formed between birth and age eight, the handicapped child will need the most assistance during the early years to develop intellectual abilities which lead to a satisfying life. There are studies in the early education of handicapped children which illustrate Bloom's point. In 1939, Skeels and Dye (Skeels, 1966) studied the effects of a stimulating environment on 12 infants placed on a ward in an orphanage compared to 13 infants who were placed with older girls who acted as mother surrogates in a

cottage setting. The group placed with the older girls had a mean IQ of 64. The group left in the ward setting had a mean IQ of 87. Following an enrichment period of 19 months, when the group in the cottages received stimulation to talk, walk and perform for their mother surrogates, the children who received an enriched environment indicated an average IQ gain of 28 points. The contrast group, which was left in the ward setting where little personal contact was available, indicated a loss of IQ points which after 31 months averaged 26 IQ points. This study indicated the effects of intellectual development, in a short term study.

However, the second criteria for early intervention, that of leading a satisfying life, was also researched by Skeels. In 1966, he reported on the follow-up study of how the groups functioned in adult life. The 13 subjects studied in the cottage setting were self-supporting and were not wards of the state in adult life. Eleven of the 13 subjects had finished high school after they had been placed in adoptive homes. Four of the subjects in the cottage group had one or more years of college work. Eleven of the 13 subjects had married. Nine of the 11 married subjects had a total of 28 children, averaging three per family. These children indicated intelligence quotients ranging from 86 to 125, well within the range of the majority of the population. None of the children indicated mental retardation or demonstrated abnormal behavior.

In the group which remained on the ward, the mean length of institutionalization was 22 years, nine months as compared to a mean

length of institutionalization of five years, one month for the cottage group. Seven of the subjects in the ward group were employed outside the institution, while four of the 12 subjects were employed as ward attendants in the institution. Only one subject in this group had completed an education beyond the eighth grade. Two of the subjects of this group were married with one subject being divorced. The divorced subject from the group which had remained on the ward had a child with possible brain damage. The remaining married subject from the ward group had children who were within the range of normal development physically, emotionally, and mentally.

Skeels' work has not been without its critics. It is true that short term gains in measured intelligence do not account for the total change which may occur in children in a stimulation program. However, the 30 year follow-up study by Skeels indicated that stimulation from an enriched environment can have positive long term effects. In this study, the handicapping condition of mental retardation due to lack of stimulation seems to have been removed, a situation which is not always possible in dealing with the handicapped child whose problems may not be due to lack of stimulation but rather physical or sensory losses.

There are studies, however, which seem to illustrate a point relative to Skeels' study. Barraga (1964) worked with visually impaired children of school age to question whether the stimulation of residual sight could help these children utilize their remaining vision. It was found that children with visual losses could learn to use residual

vision even though there was not a change in visual acuity. This study extended the facet of stimulation to include learning to use potential abilities, that is, stimulation alone does not necessarily produce change. There is a component for learning which Skeels' subjects in the cottage setting seemed to carry over for thirty years, they learned to use the abilities which they had.

Jones (1961) also illustrated the relevance of this point. He also studied visually impaired children of school age in relation to utilization of vision. He found that children who had similar visual abilities learned to read by different modes. In some instances, those children in public school classes who were expected to learn to read print tended to be able to accomplish this task while children in residential settings with similar visual abilities tended to learn to read braille. Not only is stimulation important, not only is learning to utilize potential abilities important, but also Jones' study seems to indicate that the expectancies of others contributes to the performance of the child in response to stimulation and learning.

Consider the handicapped child in the early years of life when characteristics are rapidly developing. How is this child perceived by his environmental surroundings: by parents, grandparents, siblings, and professional workers who come in contact with him? What effect does it have upon you to be told that a child is deaf, or blind, or mentally retarded?

McGuire (1968) seems to have offered some insights into the effects of the environment on what he called "reciprocal interaction."

The perceptions of others of the child's abilities, the stimulation of the environment on the child, and the learning to utilize abilities by the child create experiences which produce a central process which controls, guides, facilitates, or inhibits behavior. Hunt (1961) underscored the importance of experiences upon the development of intelligent behavior. It was the interaction between the processing of incoming information (stimulation) affecting the programming of patterns of behavior (learning) in the brain which led to a level (expectancies) of performance in systems of behavior which in turn produced a cyclic effect to repeat the process. To Hunt, it was the central process of organizing information from experiences and performing to expectancies which led to development of intellectual abilities and to leading a satisfying life. Hunt concluded that the key years were those when characteristics of behavior were developing, thus experiences in the early years led to utilization of intellectual abilities.

There is one further study which elucidates the premise of early intervention in the life of the handicapped child. Kirk (1958) studied the effects of preschool education for mentally retarded children. Four groups of mentally retarded children were selected. Their range of intelligence was from 40 to 80 as measured on the Stanford-Binet and the Kuhlman. These children were followed from ages three to six years in (1) community groups (N = 28) who received a six hour a day enriched nursery school program until the age of school placement; (2) community contrast group (N = 26) who were not in a nursery school program; (3) institutional experimental group (N = 15) who were given an

enriched early education program for six hours a day, and (4) institutional contrast group (N = 12) who were not exposed to a preschool program. After several years of programming for these children, IQ gains for the children in the community and residential program ranged from ten to 30 points. Social skills were also noticed as being more evident. Children who were not in a program in either the community or residential school showed decreases in intelligence as the four became older.

Kirk's study not only reinforces Skeels' findings that stimulation produces short term gains, but also introduces a time factor which indicates that long term gains are more probable if the intervention is conducted earlier in life, the earlier the intervention, the more permanent the results in long term gains (Kirk, 1966).

Thus, early intervention programs may help handicapped children learn to develop systems of behavior which aid in more efficient use of potential abilities. This intervention, however, is affected by the time in life when it is applied, by the learning to use potential abilities which occurs, and by the attitudes of those who work with the child to perform to certain levels of expectancy. The critical issue in staff training and program development for educational services to the young child with a handicap seems to pivot on the exact times when intervention would be most necessary and upon the types of programming which would be required.

Bayley (1969) published data in relation to standardization of the Bayley Developmental Scale. Up to 15 months of age, Bayley found no

significant differences in mental and motor development as a function of birth order, sex, parental education, geographic residence, or race. This seems to be an extremely important finding in attempting to define those internal and external forces which affect development in children. These findings suggest that up to a certain point, young children are not affected by external forces in their mental and motor development as measured on the Bayley scale. The results of the National Perinatal Study being coordinated through the National Institutes of Health promises to give more information about internal variables which affect development of mental and motor abilities in young children.

Studies in Program Development

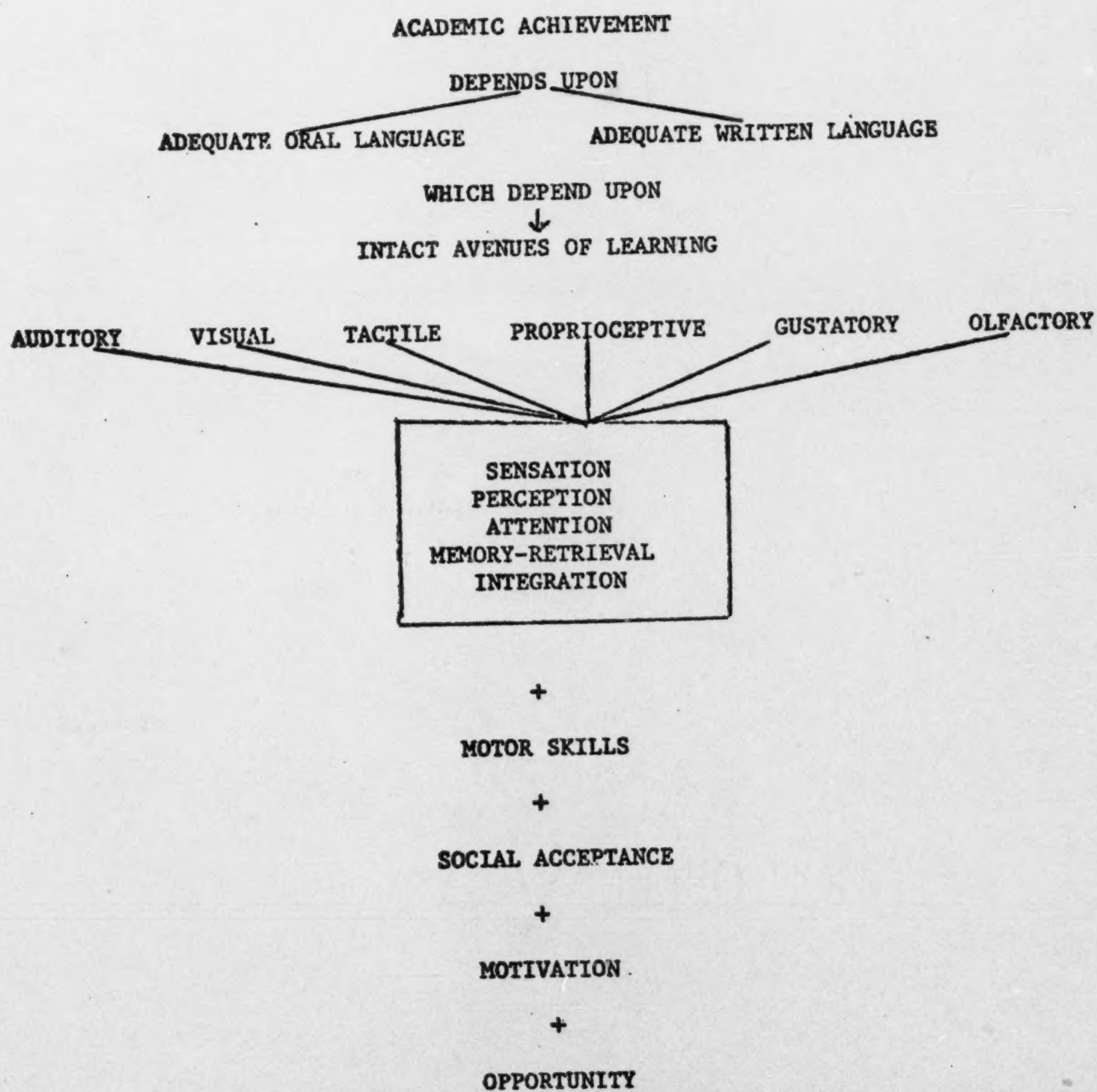
There have been several types of programs suggested which concentrate on the mediation of disabilities for very young, handicapped children (Kirk, 1962; Bangs, 1968, 1969; Hammer, 1969).

Bangs (1968) interpreted scientific information regarding the education of young children with language and learning disorders. This interpretation was based upon four basic concepts. The first factor presented a plan for the early identification and assessment of a child's profile of abilities related to language and learning. This identification and assessment sought to view current development as it related to future academic achievement. This factor recognized the need for early intervention of suspected problems. It further reiterated the relationship between early development and later achievement.

Figure 1 represents the basic philosophy followed in the development of programs for young handicapped children (Bangs, 1969). This philosophy brought together many approaches to ascertain the developmental level of the child. It is based upon diagnostic work from many disciplines with application made to help the child develop avenues of learning. Bangs' approach seems to offer a comprehensive understanding of the types of problems which would interfere in the child succeeding in an academic setting as well as offering a framework upon which programming may be planned for each child to meet unique needs.

A second construct which Bangs included in the development of services to young handicapped children was the generation of a pre-academic curriculum designed to build upon the child's assets through strengthening these abilities and designed to find ways to bring deficits in abilities up to their maximum potential. Concomitant with this factor was a third factor of assuring flexibility in programming so that each child would have appropriate materials and methods available. There seems to be a danger in developing programs for young children which revolve around the type of structure needed for the child. In early education, there has been a change from the early programs which emphasized habit training to later programs which emphasized free expression by the child back to more structured programs, in the recent past, which dealt with specific deprivations through specific stimulation. Bangs seems to offer a suitable alternative to the structure/non-structure problem of program development. In her reference, the program for the child would be based upon the particular

Figure 1.: BASIC PHILOSOPHY



SOURCE: Bangs, T.E., et al. A Preliminary Guide: Treatment and Training of Multiply Handicapped Children. Houston: Houston Speech and Hearing Center, July, 1969, p.3.

needs of the child as defined from assessment by various professionals in medicine, education, and clinical therapies. The curricula would fit the child, in this approach, rather than the child fitting the curricula.

From the presentation of assessment procedures and preacademic curriculum for the young handicapped child, Bangs provided clinical and educational materials which were offered to assist the teacher. Just as the child needs a flexible program, the teacher also needs flexibility in using various methods and materials. The teacher must be able to shift when research indicates a different trend in educating children, but the teacher must also be above fads in methodology which would restrict meeting the specific needs of the child.

Kirk and Johnson (1962) outlined a preschool program for mentally retarded children. Two factors which have retarded the development of early education programs for handicapped children, in Kirk's view, have been (1) locating children before school age and (2) developing adequate diagnostic procedures to define the problems which these young children exhibit. Kirk suggested five resources in casefinding of handicapped children: referrals by physicians, referrals by public health organizations, referrals by social agencies, publicity, and siblings of special class children. Even though some progress has been made since 1962 when Kirk and Johnson wrote this book, the referral of handicapped children is still a major problem in relation to the early education setting. There also have been many gains made in diagnostic procedures available to define problems exhibited by handicapped

children, although more efforts are needed to implement these procedures, especially for very young children.

The preschool program for handicapped, mentally retarded children outlined by Kirk was an extension of current practices in early education. This program followed three concepts:

- (1) educating the children according to good child development principles and good nursery school educational techniques;
- (2) using special clinical educational procedures with some of the children that show special disabilities over and above their lower mental ability;
- (3) supplying additional provisions which must be adapted to the lower cultural and mental abilities of most of these children (Kirk and Johnson, 1962, 140).

The constructs of this approach were (1) emotional health, to create an atmosphere of acceptance and a feeling of security; and (2) physical health, to foster a balance between physical growth and development, to teach specific health procedures to these children and to provide specific therapies when indicated. A third component of the preschool for handicapped children was for the child to be given opportunities for aid in self-help, to activities of daily living and to foster independence within the child.

Children in the preschool for handicapped children should be given the opportunity to develop imagination and creative expression, which Kirk listed as a forth component of the program. This includes free or unstructured play settings, creative rhythms through music, rolling, clapping, or stomping activities to rhythm, story time with the

teacher telling stories and the children expressing the actions through various media.

A fifth component of the preschool program should be the opportunity for social development. This includes play settings where social development may be reinforced. This includes feeding situations where children learn to interact with each other. This includes encouraging interactive play among children.

Motor play constitutes a sixth component of the preschool setting for handicapped children. In this setting, activities involving gross motor skills, fine motor skills, and coordination should be stressed. The children should be given the opportunity to develop sensory tracking to motor clues. Preacademic skills which include certain concepts such as up, down, in, out, over, under, and other spatial relationships may best be learned in motor activities.

There is a need for intellectual development for the handicapped child in the preschool setting. This seventh component includes language development, speech stimulation, planning skills, problem solving, recall and memory activities, and learning to utilize perceived information.

One other aim of the preschool setting for the handicapped child must be that of parent education. The parent needs to understand the child and the condition which threatens to delay development in the child. The parent is the first teacher of the child, better utilization of these teachers will enhance the opportunities for the child to utilize abilities. Parents have the opportunity to bring the needs of

the preschool setting for handicapped children to public attention, it should be remembered that there have never been programs offered for handicapped children without parent leadership and parents' demands for educational services.

One final component of the preschool setting for handicapped children should be the availability of special instructional procedures for these children. The development of abilities in handicapped children cannot be left to chance, or even to the possibility that a program will meet the needs of the child. Kirk and Johnson called for special clinical procedures which would help the handicapped child build upon all systems of behavior.

Hammer (1969) listed three types of programs for handicapped children under the age of school admission. Figure 2 presents the three programs and the types of activities suggested for the development of physical, mental, and social/emotional systems of behavior. The role of each type of program has been listed with the earliest age group in a program for identification of problems of development present from birth, a second program would center on the mediation of deficits in systems of behavior and a third program would seek to integrate the handicapped child with other, non-handicapped, children of similar developmental ages.

In the earliest educational setting, for children who were below two years of developmental age, the child would remain in the home with the teacher serving as an itinerant resource to the child and parent. Through periodic visits, the teacher would make observations of

FIGURE 2

DIAGRAM OF PROGRAMS FOR HANDICAPPED CHILDREN TO DEVELOP PHYSICAL,
MENTAL, AND SOCIAL-EMOTIONAL SYSTEMS OF BEHAVIOR

Systems	Programs		
	Well Baby Schools (Birth to 2 years)	Nursery/Day Care (2 to 5 years)	Kindergarten (5 to 7 years)
Physical	Role: Identification 1. Developing activities with pediatricians for home programs 2. Planning with parents, home visits, follow-up visits 3. Experiences at the sensory input motor output, perceptual levels	Role: Mediation of deficits 1. Mobility and space relations 2. Observations of play activities 3. Encourage interaction with space and environment	Role: Integration with normal children 1. Interactive play and games 2. Space relations and positions in space 3. Interaction with environment
	1. Stimulation program, with parents creating materials and activities 2. Interactive environment procedures for the home 3. Language stimulation	1. Perceptual skills development 2. Language stimulation 3. Body concept activities	1. Language development-cognitive awareness 2. Exploration of environment 3. Structured tasks, group and individual 4. Unstructured activities
	1. Parent guidance and counseling 2. Ego development 3. Experiences, introduction to groups, response to environment	1. Symbolic play 2. Skills development 3. Group work and exposure to new situations	1. Parent guidance 2. Role development 3. Awareness of abilities

SOURCE: Hammer, E. K. Development of Early Education Programs for Handicapped Children. Unpublished Doctoral Dissertation, University of Texas at Austin, August, 1969, p. 129.

the child in the home. From these observations, and from the recommendations of other professionals, programs would be planned for the enhancement of physical, mental, and social/emotional systems of behavior. In this program, the teacher would be trained to work with parents in a home counseling situation. The level of guilt feelings and anxiety over the child's condition would tend to produce emotional reactions in both parents which would need to be met with empathy. The teacher would need to be certain that activities did not create further strain on the parents to "prove" themselves. There should not be too much responsibility placed upon the parents to provide stimulation for the child through a home program. The program should serve, through appropriate counseling, to foster a better understanding in the parents of the difficulties which the child presents, rather than leading to over-compensation on the part of the parents to help their child without understanding the rationale of the program. With the help of other professionals, physicians, social workers, and counseling psychologists, the teacher also may establish group discussions for parents so that these parents will realize the common bonds which allow parents of handicapped children to understand each other and to discuss feelings and facts regarding their children.

Nursery/Day Care Programs

One of the objectives of the home program should be for the teacher and parent to discuss, over a period of time, the alternatives available for the child to attend a program away from the home. A

nursery or day care program should be available for the handicapped child from two to five years of age. This program might be a half day mediation program with day care facilities available for the child for the remainder of the day. Day care programs should be available for the child who needs to be in a setting away from the home most of the day. In this environment, the teacher could observe the child in play settings, in group activities, and in individual tasks. Speech stimulation, body concept activities, perceptual skills development, and environmental awareness would be essential parts of this program.

While it might be more appropriate for the mother of the handicapped child to serve as an aide in a nursery other than one which her child attended, the mothers should be encouraged (perhaps required) to attend these programs as aides, volunteers for specific assignments, and observers of the program's activities and goals. Discussions with the mothers could help provide a better understanding of the problems and development of children, in general, and her child specifically. The mother would also be able to discuss future goals for her child after being in attendance at programs in which handicapped children participated.

During the nursery program, the teacher would be able to make more formal types of observations of the child's development of sensory, perceptual, and concept function. Assessment also should be available from other professions such as psychological evaluations, occupational therapy assessment of self-help skills and activities of daily living, as well as assessment of motor development, language development, visual

acuity and perception, and hearing function. During the nursery program, social skills development could be encouraged through play activities which range from individual play through parallel play to interactive play. The nursery program offers the handicapped child the opportunity to learn patterns of behavior which are expected of him in social settings and provides the structure in which the isolation of the handicapped individual may be mediated.

Kindergarten Programs

In the kindergarten setting, the integration of the handicapped child with his peers would begin. This program should be available for children from developmental ages five to seven years or until school placement would be considered feasible. For the handicapped child, the kindergarten program should be a time of language stimulation and development of cognitive awareness of the environment.

The child should be given the opportunity to be with other children of similar developmental abilities and to participate in group activities. The child also should be provided tasks or the opportunity to select a task and carry it to a logical completion. In the structured aspects of the kindergarten program, the child would need particular opportunities designed to aid in the organization and completion of activities. Montessori-type materials could be used, or self-correcting materials introduced, for the child to learn to successfully manipulate objects. Included in these structured activities would be

dental care programs, toilet training for those who had not gained bladder and bowel control, and encouragement of feeding skills.

In the unstructured setting, activities should be introduced which would present opportunities for the handicapped child to interact with nonhandicapped children.

The program for parents of children in this setting should be a continuance of the program of guidance and counseling established earlier. Discussion should be available as to the alternatives from which referral and placement will be made. Figure 3 lists alternatives available for the child with cerebral palsy. This or similar diagrams may be utilized to provide information and guidance to parents seeking future placements or to teachers seeking to develop a continuum of services to handicapped children.

The research in early education of handicapped children points to the need for early mediation programs. Programs have been outlined in the literature. The literature from early education and child development offers a final segment in the survey of ideas in early education as it relates to the education of young handicapped children.

Sears and Dowley (1963) reviewed research on teaching in the nursery school. After searching the literature regarding aims of the early education setting, Sears and Dowley listed specific aims which have been incorporated in nursery school programs in this country:

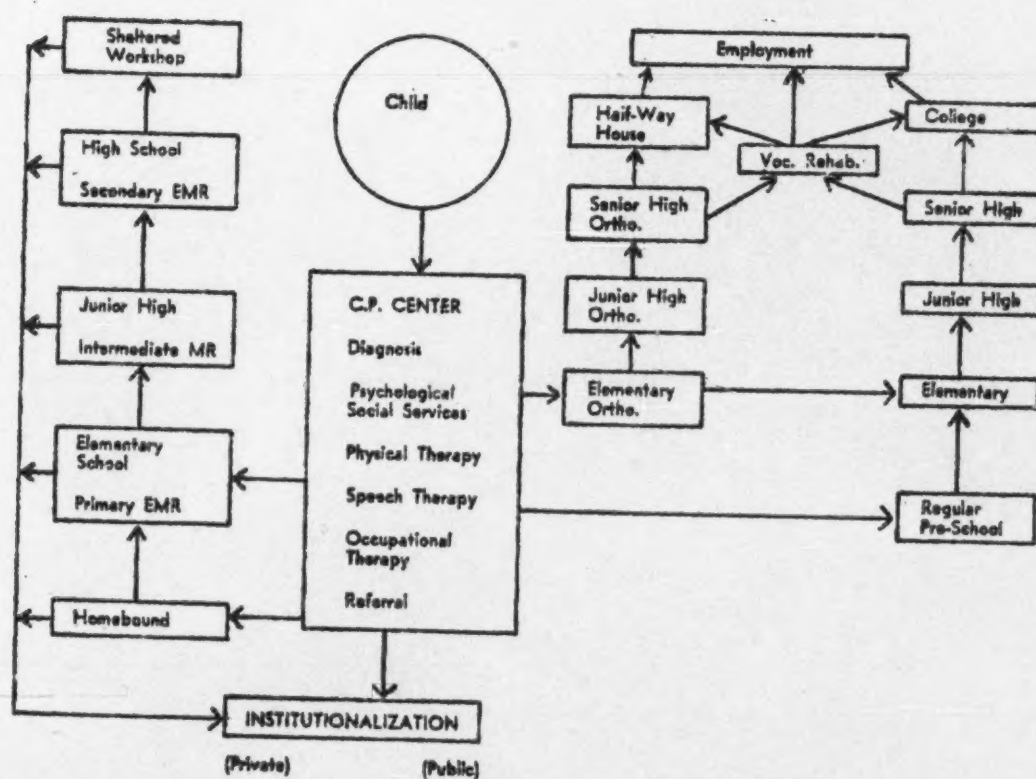
- (1) Meeting organic needs and establishing routine habits: eating, elimination, sleeping, washing, dressing, undressing.

- (2) Learning motor skills and confidence: climbing, running, jumping, balancing, learning to use the body effectively.
- (3) Developing manipulatory skills: using scissors, crayons, paste, paints, clay dough, etc.; building with blocks, working with puzzles, beads, tying, buttoning.
- (4) Learning control and restraint: listening to stories, sitting still, reacting to music.
- (5) Developing appropriate behavior: independence-dependence in adult-child relations, coping with fear, angry feelings, guilt; developing happy qualities, fun, humor, healthy optimism.
- (6) Psycho-sexual development: identification, sex role learning, formulation of conscience.
- (7) Language development.
- (8) Intellectual development: cognitive learning, concept formation, self-understanding and self-esteem; creativity; academic subject matter (Sears and Dowley, 1963, 322).

Bear (1968) listed specific goals for early education programs. One goal of early education should be intrinsic rather than extrinsic motivation for learning. There should be emphasis upon socialization and cooperation with peer interaction rather than isolated problem solving for the individual. Bear listed the goal of self-knowledge and self-expression for the child as an aim of early education. The early education program should also stimulate curiosity, creativity, and adaptive behavior rather than task-specific skills. A final goal of the early education program should be a clinical concern for the total personality of the child rather than with verbal expression of cognitive behavior.

Figure 3

ALTERNATIVES AVAILABLE FOR FUTURE PLACEMENT



Source: Hammer, E. K. Development of Early Education Programs for Handicapped Children, Unpublished Doctoral Dissertation, University of Texas at Austin, 1969

Such listings of aims and objectives have validity in long term perspectives. However, the short term goal of developing a program for a child requires a different perspective in terms of programming. One of the commonalities of early education and special education has been that individual needs of the child formed a central focus. The immediate goals for the child must fit into the objectives set out to offer experiences to young children, however, the intervening factors of development in each child make the fundamental needs of the child primary to selection of long term goals.

Frank (1938) listed fundamental needs of children within the premise that the controlling factors in the nurture and education of the child were often ideas and purposes remote to the child himself. This premise places the aims and goals of early educational programming in perspective. These goals are often for the benefit of the curriculum guide or grant proposal rather than statements of the efforts to meet the requirements of the child. Every culture, according to Frank, imposes deprivations and repressions, patterning and regulation of physiological functions, and external control of human behavior to maintain the status of the culture.

The most general hypothesis which may be made about the fundamental needs of the child "should be that he be protected from distortions and exploitations by adults (Frank, 1938, 356)." This statement seems particularly clear when programs for young handicapped children are recalled which mask, pattern, implode, stimulate, or experientialize the child. How many young children, especially

handicapped children, are exploited by methodologies without regard to whether these approaches are for the betterment of the child or for the illustration of the teacher knowing a certain facet of training which is then applied to all children?

Frank stated that a second fundamental need of the child was for the child to be accepted as a unique individual. If this were not possible, due to adult bias, the child would need protection from the destructive, warping influences of adult expectations, including parents' and teachers' expectations. This need must be met not only in program content for the young child, but also in assessment and identification procedures utilized to profile development. Many children have been permanently damaged by being labeled rather than described in assessments. There are too many labels used, such as aphasic, mentally retarded, hyperactive, minimally brain damaged, or minimally cerebral palsied, which have too many semantic overtones to be of benefit in describing the child. Children need protection from being pigeon-holed too early in life to specific disability labels which would exert direction over expectancies of performance.

A third need for the child is functional efficiency. The child requires food, rest, sleep, play, and security so that he will grow and develop at his own rate, not to some normative scale. Functional efficiency implies that the child will be in a supportive environment where exploration, trial and error, and reinforcement will be available to help the child learn to participate in his environmental surroundings.

Elimination and regularization are another of the needs which have been imposed, in many instances, by social standards rather than by

physiological development of the child. The question should be asked whether toilet training was for the sake of conforming to cultural standards or whether it was an attempt to help the child develop personal habits which would be an asset. Far too often, delayed toilet training in handicapped children precludes these children's participation in early education programs. Many academic program administrators consider toilet training a major prerequisite for admission to the program, thus depriving those very children who would benefit from experiences in a classroom setting of the opportunity to enter a classroom.

The child, in Frank's view, needs affection and reassurance as he becomes more seeking and interactive with his environment. The end product of this reinforcement of assertive behavior is for the child to become a part of the world about him. Perhaps the baseline goal of an early education program for handicapped children would be to elicit meaningful responses from the child to environmental stimuli. Affection and reassurance serve as prime reinforcement for initial attempts to explore the environment.

As the child becomes interactive with his environment, he needs help in learning how to express emotional reactions appropriately. "In other words, the emotional reactions of the child are normal psychological functions that call for regulation and patterning, so that the child may be freed from their urgency and disturbance (Frank, 1938, 383)." Because emotions traditionally have been treated as moral issues, there has been difficulty in providing the individualized help needed to

meet personal reactions. Perhaps the need would be for reassurance that the child will be able to express emotions without fear, shame, guilt, or grief being imposed. In this area, Frank discussed the emotional reactions of children to death, arrival of siblings, acceptance of sex roles, and the "inviolabilities that every culture establishes with respect to objects, persons, places, and times (1938, 367)." Actions which may be performed at one time or place may not be permitted at another. The child must try to learn the "rules of the game" as explicitly set down by the culture. This will not be an easy task and the child will need guidance as exploration for rules and guides are made and comprehended. This will, at times, bring the child's behavior into conflict with societal values. As a member of the culture, the child must learn to accept authority, to recognize outside control which may be based upon a tradition not easily verbalized or comprehended by the child. At the same time, the child must not be inhibited or compromised in exerting initiative to seek out the environment. This brings the child into the cultural group life in such a setting that "the learned conduct, essential to group life, is never assimilated or made wholly automatic, and so the child becomes preoccupied with the conflict between what he must do and not do and what he feels (1938, 370)."

A final need, as stated by Frank, would be that of the opportunity for the child to develop these emotions in a setting which allows positive confrontation with emotions and equally positive alternative methods of handling these emotions. This need may be stated as the fundamental need of the child to develop some type of self-understanding

or self-image. Through this development, the child may generate awareness of the "rules of the game," how the child fits into the environmental setting, and what priorities are placed upon emotions, inwardly felt and outwardly expressed, within cultural bounds.

In reviewing the listing by Frank of the fundamental needs of the child, it would seem that the focus of these needs would be the interaction between the child and the culture. The child would need to develop perceptions of cultural expectancies. The child would need to learn the code of the culture, i.e., the mores through which action will be accepted in the society. This learning occurs through social reinforcement of the child's behavior which leads to further forms of behavior for the child which are positively or negatively reinforced. The level of learning which the child attains, therefore, is based upon cultural perceptions (or "adaptive behavior" as it has been classified by Heber, 1961; Piaget, 1966). The level of learning, or cultural perceptions in the child, or adaptive behavior would be cumulative, each form of behavior being based upon past behaviors which had been reinforced socially.

However, such a statement of needs seems to place the emphasis upon societal expectancies or cultural demands. This does not mean that Frank was in error when stating the fundamental needs of the child; rather it means that there should be further inquiry into needs which may be a priori to those needs which Frank stated so completely.

To extend the inquiry into other fundamental needs of the child, reports from research studies offer insight into some of the basic physiological needs of the child.

There have been discussions of the need for oxygen in the infant (Ribble, 1943; Pinneau, 1950) as related to behavioral development of the child. However, there is a need for oxygen to maintain physical systems, regardless of its function in the social-emotional development of the child. Lack of oxygen near the end of the gestation period "can cause permanent damage in the brain (AMA, 1965, 91)." Clifford (1964, 243ff.) utilized the data from the National Collaborative Study for Cerebral Palsy, Mental Retardation, and Other Neurological and Sensory Disorders in Infancy and Childhood. He reported on 33,000 pregnancies and listed the profile of high risk to be found at birth: appearance, cyanosis, resuscitation needed, respiratory distress present, coloration, Apgar score, and the condition of the infant at birth. In the neonatal period, high risk factors seemed to be: need for oxygen, incubation, sucking ability, asymmetry of face and extremities, jaundice, tonus, seizures, vomiting, fever, poor weight gain, and high pitched cry. To this list may be added: need for exchange transfusions, congenital abnormalities noticed, and hypo- or hyperactivity (NIH, 1965).

These factors underscore the need of the infant and young child for oxygen to be one of the prime needs if the child will be able to survive and to develop as do other children. The majority of factors listed by Clifford (1964) in the profile of high risk infants is directly related to the oxygen level present in the child. Specifically, these factors related to oxygen level are: cyanosis, resuscitation needed, respiratory distress present, coloration, and Apgar scores.

Immediately after birth, specific factors related to oxygenization are: need for oxygen, incubation, and in some instances, jaundice and seizures when these factors are related to lack of oxygen in the blood. In this respect, the need for oxygen also would be related to an adequate oxygen gathering system and an adequate oxygen distribution system in the organism. The child with congenital defects in oxygen gathering or oxygen distribution to vital parts of the body, specifically the brain, may be marked for delayed development from birth, or even before birth.

Thus, it would seem logical to state that another need of the child would be adequate prenatal, natal, and postnatal care, including professional care to assure that the mother does not aid in the maldevelopment of the fetus, that the child will be born with minimal risk of having congenital defects or delays, and that the child will be given every opportunity for proper medical care, nutritional care, and follow-up of any suspect difficulty which may be present at birth.

In the young child, this need for adequate medical care would include the need for protection against infections and diseases which would affect the development of the child from a health standpoint.

Nutritional needs certainly are fundamental for the growth and development of any child. However, these needs tend to be stated in terms of cultural forms which prescribe the dietary habits of the members of the culture. Mead (1966, 245) discussed the cultural aspects of nutrition in children and noted that regardless of the practices of meeting nutritional needs "enough infants have survived to perpetuate

their culture to the point of record." Without entering into the cultural aspects of how the infant will be fed, what nutritional content the food will have, or in what manner the infant may be nutritionally sustained, it may be concluded that a diet which contributes to physical and mental development would be, of necessity, one of the major fundamental needs of the child.

The child must not only be "functionally efficient," as Frank listed, but also "functionally interactive." This need includes the development of systems of communication which are both verbal and symbolic in expression. The child must be able to express thoughts, feelings, and ideas to other members of the culture in order to receive the reinforcement that will allow him to become an accepted member of the society. Likewise, the child must be able to receive stimulation from members of the culture.

To bring together the aims and objectives, which have been listed for early education programs, and the fundamental needs of the child into a meaningful program for handicapped children, the key person is the teacher. What will the teacher need in the way of training and experiences to provide the best type of program for the young handicapped child? One of the basic requirements for the teacher of young handicapped children is a knowledge of how children develop systems of behavior. Secondly to this is a questing to find out how physical growth affects the child's behavior, how mental development has progressed, and how the child utilizes social behaviors to relate to the environment and emotional behaviors to express feelings.

Knowledge of behaviors may be obtained through two types of assessment: formal, i.e. structured assessment, and clinical observation. The reluctance of teachers to use formal measures of behavior probably stems from the lack of training in assessment in the teacher preparation program and from the lack of information which is obtained from the testing procedure. Teachers' interest in assessment should not be in producing an IQ score on a child; there are other professionals who can and should do this. Teachers should be interested in describing development along a profile of behaviors. An example of this would be the Vineland Social Maturity Scale and its adaptations which would tell the teacher about specific skills which the child exhibits. Another such instrument would be the Brenner Gestalt Test of School Readiness. This test compares certain performances such as matching, drawing, reproducing patterns, basic counting, and hand-eye coordination skills to children who are entering first grades. Such information would help the teacher know where to begin with the child and later assessment could serve to evaluate how effective programming had been. The teacher should ask for specific types of abilities which need to be assessed and then find the construct through which this information could be gained and use it to see if it provides insight into the problem. Teachers should be seeking to describe behavior, not label it.

Clinical observation is not new to teachers. The teacher may not realize that clinical observations are being done, but when a teacher says that a child seems to have trouble grasping a pencil or crayon or in feeding himself, this is a clinical observation. The next

step in making such an observation is to analyze the components of the skill being observed. This is no more than the sequential analysis of activities with which teachers are familiar. Once the sequence has been analyzed, the teacher may then proceed to help the child overcome those areas where difficulty is occurring, or offer materials which will be self correcting. If the sequence is not explained through analysis, other professionals should be included in the search to find out why a child is not accomplishing the task. In this event, the teacher should relate observations made on the child and ask specifically for information for programming.

The role of the teacher as clinician has been discussed by Hewitt (1968) and by Bateman (1967). These procedures permit the teacher to vary the activities to meet the needs of the child and to plan for the habilitation of the child on a continuum of services. The traditional clinical approach for the evaluation of the handicapped child has been intended to serve at least three objectives: (1) the determination of intellectual status, (2) the projection of a theoretical pace of the future course of development, and (3) an estimate of the child's educational potential based upon the two preceding conclusions (Weiner, 1967, 367). Clinical procedures are based upon a system of observations. Inherent to the development of observational systems is the role of the teacher as observer and the characteristics of behavior which are selected for assessment.

Hewitt (1968) listed three strategies in teaching children using the clinical method: (1) the psychodynamic-interpersonal

strategy, (2) the sensory-neurological strategy, and (3) the behavior modification strategy. In the psychodynamic-interpersonal strategy, the teacher assumes the function of the "educational therapist." "In this role, artistry and intuition may be of greater importance than teaching competency (sic, knowledge of academic subject content) (1968, 18)." This strategy focuses on the meaning and origin of the child's behavior and attempts to direct this behavior toward constructive goals through development of insight in the child as to cultural expectancies of behavior. The educational therapist relates to educational, psychological, and, at times, psychiatric information in planning programs for the child.

A second strategy listed by Hewett (1968, 24) was that of an "educational diagnostician" who used the sensory-neurological basis in providing educational programs for handicapped children. The sensory-neurological strategy relates to medicine, especially neurology, and ". . . in general, there is little concern with inferred psychological meaning of the child's behavior" although, in Hewett's view (1968, 24), those who utilize this approach vary on this point. Hewett listed Kirk, McCarthy, Fernald, Kephart, Frostig, Lehtenin, and Cruickshank as educational diagnosticians who used the sensory-neurological approach in education. This strategy is concerned with the underlying organic causes related to behavior.

A third strategy listed was behavior modification where the teacher becomes a "learning specialist" in Hewett's categorization (1968, 35). In this strategy, the child's behavior is viewed in terms

of its adaptive function which does not consider causal factors or the origin of behaviors.

(Although) it is not, as some may assume from the emphasis on structure and routine, mere emulation of a teaching machine. Selection of the appropriate 'something' to assign the child as a beginning task, the elaboration of this task until the child reaches the desired standard of functioning in the classroom, and the selection of the type of meaningful positive consequences for appropriate behavior and the type of negative consequences for inappropriate behavior in order to insure learning, requires a considerable knowledge of child developmental processes, a degree of clinical judgment, and familiarity with sound educational practices (1968, 35).

Bateman (1967) also listed three clinical approaches to teaching children with disabilities: (1) the etiological approach, (2) the diagnostic-remedial approach, and (3) the task analysis approach. The etiological approach is centered on causative factors of delayed development while the diagnostic-remedial approach focuses on the delineation of specific sensory and perceptual deficits. The task analysis approach attempts to define educational tasks, which the child needs, to achieve particular objectives in the classroom. Bateman did not contend that these approaches were independent but rather that they were educational tools to aid in the clinical application of education to the needs of the child.

The role of the teacher in the early childhood education setting has also been clinical in nature, with observations being made of the emergence of systems of behavior. To the untrained observer, the teacher of programs centering on emergent curricular principles may seem

too passive, allowing the child to participate aimlessly in activities. However, further inspection of the early education teacher's role will indicate that the teacher is providing the opportunity for the particular needs of the child to emerge and to determine the timing of different activities so that these emerging needs may be observed. If the specific behavior is not exhibited in these activities, the early education teacher will be able to provide activities which will help in bringing out this behavior.

Sears and Dowley (1963) have reviewed the literature which has led to the definition of the role of the early education teacher. Summarizing various studies in the relationship of teacher to child, it was noted that the model of behavior provided by the teacher sets the tone for interaction among children as well as the method of the approach taken by the child in the expression of feelings.

Thus, nonaggressive behaviors were imitated more readily if the relationship between the adult and the child had been warm and nurturant . . . (Sears and Dowley, 1963, 827).

In the area of dominating behavior on the part of the teacher, research reviewed by Sears and Dowley pointed to the finding that domination by the teacher incited resistance in the child which led to nonconforming behavior. Thus the teacher who is able to lead the child to activities will find that achievement will tend to occur more readily when the child is not dominated by authoritarian models, but has received more personal guidance.

Summary

This brief overview has attempted to relate the development of early education programs to the education of handicapped children. The body of professional literature related to early education is too vast to be reviewed in a single publication. This presentation has stated the premise that early mediation of disabling conditions is beneficial to the handicapped child. Types of programs have been presented from the literature regarding early education of handicapped children. One specific commonality which has been presented to serve as a framework for developing required services for handicapped children, that of the fundamental needs of all children as suggested by L. K. Frank in 1938. There are other common needs, such as specific and disability mediation, which may also be used for program development. If programs for handicapped children are to proceed along a continuum, the fact that the child is first a child and then a child with a handicap must be kept in mind. It does not seem possible that early childhood education programs for handicapped children can simply be a downward extension of existing academic programs. They must be based upon the total development of the child's physical, mental, and social-emotional systems of behavior. This mental set or reminder may be the most significant contribution of early childhood education to the education of young handicapped children.

This presentation is intended to stimulate thought and discussion in staff development programs for the education of young handicapped children. Examples have been presented regarding techniques for observing emerging needs in children, however, further inquiry is

required into ways of identifying the needs of the handicapped child. With this identification should come programs to meet these developmental delays in a preschool setting.

In reviewing the historical development of early childhood education, the author began to note that the emphasis upon early childhood education seemed to occur during times of national crises or when threats to cultural continuity faced society: thus World War I and the subsequent nursery school movement, the depression of the 1930s and the WPA early childhood programs, World War II and the emergence of cooperative day care programs, the mid-twentieth century civil rights movement, and Head Start. Staff training procedures must also be aware of the historic evolution of early childhood education. Brief histories are available in Frank, 1962; Sears and Dowley, 1963; and Hammer, 1969. There seems to be a cyclic interest in early childhood programs and with each "rediscovery", there is a rise and then fall in support and interest. Those who would develop early education programs for handicapped children would be wise to be aware of this cyclic support, otherwise early education programs for handicapped children may be another phase in the repeated rediscovery of early childhood education.

Sears and Dowley (1963, 826) commented that it is possible the whole nursery school program represents to the child social deprivation of adult male companionship. Discussion of the role of the teacher, the relationship of the teacher to the child, and the representation of models for behavior should occupy a central position in staff training. It is not sufficient to restate the need for men in the early childhood

setting, economically it does not seem feasible to expect this to occur, otherwise the problem would have corrected itself. Secondly, the male who assumes the role of teacher of young children does not seem to fit naturally into current settings. Alternate methods of involving fathers and other males in the early education program might be the answer to this problem.

Another area of need is that of casefinding. Included in this is the problem of handicapped children being made known to those who would provide services, the problem of training adequate staff to serve the children and the training of staff to relate not only to the child but also to parents.

While there seems to be little opposition within the special education profession to develop early education programs for handicapped children, program development faces social realities which may hinder progress. A recent poll of teachers in Houston, for instance, indicated that 90% of the teachers polled opposed kindergarden programs for all children (Stromberg, 1970). Extension of educational facilities requires competition for salaries and plant facilities. How may local programs be developed in light of these economic problems? Outside the teaching profession, what support is available for early education programs for handicapped children from medical societies, parent organizations, and school boards? How may training programs assist the teacher of young handicapped children face the social/political challenges inherent to developing programs?

Such questions are offered to encourage further inquiry and reading in early childhood education and in discussion of problems encountered in program implementation. This article has stated some of the basic ideas in early childhood education as well as the logical development of programs for young exceptional children. From this, hopefully, further progress will occur in staff training as divergent discussion seeks better ways to implement this premise.

BIBLIOGRAPHY

- American Medical Association. Mental Retardation: a handbook for the primary physician. Chicago: Author, 1965.
- Bangs, T. E. Language and Learning of the Pre-Academic Child: with Curriculum Guide. New York: Appleton-Century-Crofts, 1968.
- Bangs, T. E., Vallbona, C., et al. A Preliminary Guide: Treatment and Training of Multiply Handicapped Children. Houston: Houston Speech and Hearing Center, 1969.
- Barraga, N. C. Increased Visual Behavior in Low Vision Children. New York: American Foundation for the Blind, 1964.
- Bateman, B. Three Approaches to Diagnosis and Educational Planning for Children with Learning Disabilities. Proceedings: 1967 International Convocation on Children and Young Adults with Learning Disabilities. Pittsburgh: Home for Crippled Children, 1967, 120-130.
- Bayley, N. The Bayley Scales of Infant Development. New York: The Psychological Corporation, 1969.
- Bear, R. M. Issues in Early Learning and Preschool Education. In R. D. Hess and R. M. Bear (Eds.) Early Education: Current Theory, Research and Action. Chicago: Aldine, 1968, 223-230.
- Bloom, B. S. Stability and Change in Human Characteristics. New York: Wiley, 1964.
- Clifford, C. Profile of High Risk in Newborn. New England Journal of Medicine, 1964, 271, 243-249.
- Frank, L. K. The Fundamental Needs of the Child. Mental Hygiene. 1938, 22, 353-377.
- Frank, L. K. The Beginnings of Child Development and Family Education in the Twentieth Century. Merrill-Palmer Quarterly. 1962, 8, (Monograph Supplement # 4).
- Frost, J. L. Early Childhood Education Revisited. New York: Holt, Rinehart, Winston, 1968.
- Hammer, E. K. Development of Early Education Programs for Handicapped Children. Unpublished Doctoral Dissertation, University of Texas at Austin, 1969.

- Heber, R. (Ed.) A Manual on Terminology and Classification in Mental Retardation (2nd ed.). Monograph Supplement American Journal of Mental Deficiency, 1961.
- Hewett, F. M. The Emotionally Disturbed Child in the Classroom: a developmental strategy for educating children with maladaptive behavior. Boston: Allyn and Bacon, 1968.
- Hunt, J. McV. Intelligence and Experience. New York: Ronald Press, 1961.
- Hymes, J. L. Teaching the Child Under Six. Columbus, Ohio: Charles Merrill, 1968.
- Jones, J. W. Blind Children: degree of vision, mode of reading, Bulletin 24. Washington: U. S. Office of Education, 1961.
- Kirk, S. A. Early Education of the Mentally Retarded. Urbana: University of Illinois Press, 1958.
- Kirk, S. A. and Johnson, G. O. Educating the Retarded Child. New York: Houghton Mifflin, 1962.
- McGuire, C. Emergent Views of Intelligent Behavior. Englewood Cliffs: Prentice Hall, 1968.
- Mead, M. A. Cultural Anthropologist's Approach to Maternal Deprivation. In J. Bowlby Maternal Care and Mental Health: deprivation of maternal care. New York: Schocken Books, 1966.
- National Institutes of Health. Summary of Progress in Childhood Disorders of the Brain and Nervous System. Washington: U. S. Government Printing Office, 1965.
- Piaget, J. Psychology of Intelligence. (Trans. Malcolm Piercy and D. E. Berlyne. London: Routledge and Kegan Paul, 1950). Reprinted as ILP # 222. Towota, New Jersey: Littlefield, Adams, 1966.
- Pinneau, S. R. A Critique of the Articles by Margaret Ribble. Child Development. 1950, 21, 203-228.
- Ribble, M. The Rights of Infants. New York: Columbia, 1943.
- Sears, P. S. and Dowley, E. M. Research on Teaching in the Nursery School. In N. L. Gage (Ed.) Handbook of Research on Teaching. Chicago: Rand McNally, 1963.
- Skeels, H. M. Adult Status of Children with Contrasting Early Life Experiences. Monographs of the Society for Research in Child Development, 1966, 31 (Monograph 3).

Stromberger, E. Austin Report: New Educational Stage. Dallas Times
Herald, April 5, 1970, p. 27A.

RELATED READINGS

- Buchanan, R. and Mullins, J. B. Integration of a Spina Bifida Child in a Kindergarten for Normal Children. Young Children. 1968, 23, 339-344.
- Frank, L. K. Evaluation of Educational Programs. Young Children, 1969, 24, 164-174.
- Gould F. and Kerckhoff, R. K. Space Needed for Human Differences. Offspring: Parent Cooperative Preschools International. April, 1964.
- Kagan, J. The Child: His Struggle for Identity. Saturday Review. December 7, 1968, 80-83.
- Kagan, J. Personality Development. Southern Medical Bulletin. 1969, 57 (4), 14-19.
- Little, A. The Handicapped Child in the Preschool Center. Growing Up Together: A Child with a Handicap. Series # 3, 1964, 7-13.
- Menyuk, P. Sentences Children Use. Research Monograph No. 52. Cambridge: M.I.T. Press, 1969.
- Michal-Smith, H. The Exceptional Child in the Normal Nursery. Early Childhood Education Council of New York Proceedings. 1955.
- Painter, G. The Effect of a Rhythmic and Sensory Motor Activity Program on Perceptual Motor Spatial Abilities of Kindergarten Children. Exceptional Children, 1966, 33 (2), 113-116.

VITA

Edwin K. Hammer
3108 Jubilee Trail
Dallas, Texas 75229

Office Phone: (214) 638-1100
Home Phone: (214) 352-7428

1. Coordinator, Area Centers for Services to Deaf-Blind Children, c/o Callier Hearing and Speech Center, 1966 Inwood Road, Dallas. July, 1969 to present.
2. Executive Director, Austin Cerebral Palsy Center, 919 W. 28¹/₂ Street, Austin, Texas. May, 1968 to July, 1969.
3. Psychologist, Austin Cerebral Palsy Center, Austin, Texas. October, 1966 to May, 1968.
4. Workshop Director, Cerebral Palsy Workshop, The University of Texas at Austin, Department of Special Education, summers of 1967 and 1968.
5. Consultant-Teacher for the Gifted, Holton Public Schools, Holton, Kansas. September, 1964 to June, 1966. (Cooperative Research Grant #S-088).
6. B.A. University of Texas at Austin, 1956.
Major: Plan II, a liberal arts honors program.

M.S. Kansas University, Lawrence, Kansas, 1966.
Major: Special Education (Intellectually Different: Gifted and Mentally Retarded).

Ph.D. University of Texas at Austin, 1969.
Major: Special Education (Crippled and Other Health Impaired, Including Learning Disabilities and Cerebral Palsy).
7. Thesis Topic: An Investigation of Self-Concepts of Gifted High School Students in Holton, Kansas, High School

Dissertation Topic: Development of Early Education for Handicapped Children
8. Publications:
 - A. Self-Concepts of Gifted Children. In Robert Cornish (ed.) Kansas Studies in Education, 1967.
 - B. Demonstration of the Significance of a Consultant-Teacher for the Gifted in a Small Rural Secondary School. (Cooperative Research Project # S-088. In Paul Ackerman (ed.) Kansas State Department of Public Instruction Department Publication, 1965.

- C. A Comparison of Assessment Techniques and Methods of Instruction in Tactile and Kinesthetic Perception. In Charles H. Dolezal (ed.) Manual for the Orientation Workshop for Preparation of Teachers for Minimally Brain-Injured Children, 1968.
- D. Report of a Regional Conference for Coordinating Rehabilitation and Education Services for the Deaf - Region VII. Callier Hearing and Speech Center, 1969.
- E. Deaf-Blind Children: A List of References. Special Education Instructional Materials Center, Austin, Texas, 1970.
- F. Review of the Literature on Early Childhood Education, With Emphasis on Early Education for the Handicapped. Staff Training Project, Exemplary Early Childhood Centers for Handicapped Children, University of Texas at Austin. (in print)